

CLAIMS

What is claimed is:

- 1 1. A method comprising:
2 aligning first and second sets of terminals of an integrated circuit (IC) with
3 corresponding third and fourth sets of terminals of a substrate, the first and second
4 sets of terminals being in first and second zones, respectively, of the IC;
5 coupling the first and third sets of terminals with a first type of connector;
6 and
7 coupling the second and fourth sets of terminals with a second type of
8 connector.
- 1 2. The method recited in claim 1, including forming the first and second sets of
2 terminals on a surface of the IC.
- 1 3. The method recited in claim 2, including forming the first zone in a central
2 region of the surface.
- 1 4. The method recited in claim 2, including forming the second zone in a
2 peripheral region of the surface.
- 1 5. The method recited in claim 1, wherein coupling the first and third sets of
2 terminals with the first type of connector comprises using solder.
- 1 6. The method recited in claim 1, wherein coupling the second and fourth sets
2 of terminals with the second type of connector comprises using a solderless,
3 compliant, electrically conductive material.

1 7. The method recited in claim 1, wherein coupling the second and fourth sets
2 of terminals with the second type of connector comprises using a connector from the
3 group comprising a nanospring, a sea of leads connector, and an interposer.

1 8. The method recited in claim 1, wherein coupling the second and fourth sets
2 of terminals with the second type of connector comprises physically compressing
3 the IC and the substrate together.

1 9. A method comprising:
2 aligning first and second sets of terminals of an integrated circuit (IC)
3 package with corresponding third and fourth sets of terminals of a substrate, the first
4 and second sets of terminals being in first and second zones, respectively, of the IC
5 package;
6 coupling the first and third sets of terminals with a first type of connector;
7 and
8 coupling the second and fourth sets of terminals with a second type of connector.

1 10. The method recited in claim 9, including forming the first and second sets of
2 terminals on a surface of the IC package.

1 11. The method recited in claim 10, including forming the first zone in a central
2 region of the surface.

1 12. The method recited in claim 10, including forming the second zone in a
2 peripheral region of the surface.

1 13. The method recited in claim 9, wherein coupling the first and third sets of
2 terminals with the first type of connector comprises using solder.

1 14. The method recited in claim 9, wherein coupling the second and fourth sets
2 of terminals with the second type of connector comprises using a solderless,
3 compliant, electrically conductive material.

1 15. The method recited in claim 9, wherein coupling the second and fourth sets
2 of terminals with the second type of connector comprises using a connector from the
3 group comprising a nanospring, a sea of leads connector, and an interposer.

1 16. The method recited in claim 9, wherein coupling the second and fourth sets
2 of terminals with the second type of connector comprises physically compressing
3 the IC package and the substrate together.

1 17. An electronic package comprising:
2 a die comprising first and second sets of terminals disposed in first and
3 second zones, respectively, of the die;
4 a substrate comprising third and fourth sets of terminals;
5 a first type of connector to couple the first and third sets of terminals; and
6 a second type of connector to couple the second and fourth sets of terminals.

1 18. The electronic package recited in claim 17, wherein the first and second sets
2 of terminals are disposed on a surface of the die.

1 19. The electronic package recited in claim 17, wherein the first zone is centrally
2 located on the surface.

1 20. The electronic package recited in claim 17, wherein the second zone is
2 peripherally located on the surface.

1 21. The electronic package recited in claim 17, wherein the first type of
2 connector comprises solder.

1 22. The electronic package recited in claim 17, wherein the second type of
2 connector comprises a compliant, electrically conductive material.

1 23. The electronic package recited in claim 17, wherein the second type of
2 connector is from the group comprising a nanospring, a sea of leads connector, and
3 an interposer.

1 24. The electronic package recited in claim 17, wherein the second type of
2 connector comprises an interposer, and wherein the electronic package further
3 comprises:
4 an element to physically compress the die and the substrate together to
5 electrically couple the die to the substrate.

1 25. The electronic package recited in claim 24, wherein the interposer
2 comprises:
3 a flexible support formed of electrically insulating material; and
4 a plurality of elements formed of electrically conductive material.

1 26. The electronic package recited in claim 17, wherein the second type of
2 connector comprises a compressible element to electrically couple the die to the
3 substrate.

1 27. The electronic package recited in claim 17, wherein the die further
2 comprises a fifth set of terminals disposed in a third zone of the die, wherein the
3 substrate comprises a sixth set of terminals, and wherein the electronic package
4 further comprises:
5 a third type of connector to couple the fifth and sixth sets of terminals.

1 28. The electronic package recited in claim 27, wherein the first, second, and
2 fifth sets of terminals are disposed on a surface of the die, wherein the first zone is
3 centrally located on the surface, wherein the second zone is peripherally located on
4 the surface, and wherein the third zone is located on the surface between the first
5 and second zones.

1 29. The electronic package recited in claim 27, wherein the first type of
2 connector comprises solder, and wherein the second and third types of connectors
3 comprise compliant material.

1 30. The electronic package recited in claim 27, wherein the first type of
2 connector comprises solder, and wherein the second and third types of connectors
3 are from the group comprising a nanospring, a sea of leads connector, and an
4 interposer.

1 31. An electronic assembly comprising:
2 an integrated circuit (IC) package comprising first and second sets of
3 terminals disposed in first and second zones, respectively, of a surface of the IC
4 package;
5 a substrate comprising third and fourth sets of terminals;
6 a first type of connector to couple the first and third sets of terminals; and
7 a second type of connector to couple the second and fourth sets of terminals.

1 32. The electronic assembly recited in claim 31, wherein the first zone is
2 centrally located on the surface, and wherein the first type of connector comprises
3 solder.

1 33. The electronic assembly recited in claim 31, wherein the second zone is
2 peripherally located on the surface, and wherein the second type of connector
3 comprises a compliant, electrically conductive material.

1 34. The electronic assembly recited in claim 31, wherein the second type of
2 connector is from the group comprising a nanospring, a sea of leads connector, and
3 an interposer.

1 35. The electronic assembly recited in claim 31, wherein the second type of
2 connector comprises an interposer, and wherein the electronic assembly further
3 comprises:
4 an element to physically compress the IC package and the substrate together
5 to electrically couple the IC package to the substrate.

1 36. An electronic system having at least one electronic assembly comprising:
2 a die comprising first and second sets of terminals disposed in first and
3 second zones, respectively, of a surface of the die;
4 a substrate comprising third and fourth sets of terminals;
5 a first type of connector to couple the first and third sets of terminals; and
6 a second type of connector to couple the second and fourth sets of terminals.

1 37. The electronic system recited in claim 36, wherein the first zone is centrally
2 located on the surface, and wherein the first type of connector comprises solder.

1 38. The electronic system recited in claim 36, wherein the second zone is
2 peripherally located on the surface, and wherein the second type of connector
3 comprises a compliant, electrically conductive material.

1 39. A data processing system comprising:
2 a bus coupling components in the data processing system; and
3 a processor coupled to the bus and including at least one electronic package
4 comprising:

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- 5 a die comprising first and second sets of terminals disposed in first and
- 6 second zones, respectively, of a surface of the die;
- 7 a substrate comprising third and fourth sets of terminals;
- 8 a first type of connector to couple the first and third sets of terminals; and
- 9 a second type of connector to couple the second and fourth sets of terminals.

1 40. The data processing system recited in claim 39, wherein the first zone is
2 centrally located on the surface, and wherein the first type of connector comprises
3 solder.

1 41. The data processing system recited in claim 39, wherein the second zone is
2 peripherally located on the surface, and wherein the second type of connector
3 comprises a compliant, electrically conductive material.

1 42. The data processing system recited in claim 39 and further comprising:
2 a display coupled to the bus; and
3 external memory coupled to the bus.